

ABSTRACT

Process for the catalytic dehydrogenation of a C₂ or C₃ alkyl aromatic in which a feedstock containing the alkyl aromatic and steam is supplied into the inlet of a tubular reactor containing a dehydrogenation catalyst. Within the reactor, the feedstock flows through at least a portion of the reactor along a spiral flow path extending longitudinally of the reactor. The resulting vinyl aromatic product is then recovered from a downstream or outlet section of the reactor. The spiral flow path through which the feedstock is passed is located at least adjacent the inlet side of the reactor and at least a portion of the spiral flow path contains a particulate dehydrogenation catalyst. The spiral flow path may extend throughout a major portion of the elongated tubular reactor and may contain a particulate dehydrogenation catalyst in a substantial portion there. The feedstock containing the alkyl aromatic and steam is supplied into a plurality of tubular reactors located within the interior of a dehydrogenation reactor vessel and is arranged in a parallel relationship in which the tubular reactors are spaced laterally from one another and from the interior wall of the reaction vessel.